

## Claims

I Claim:

1. A volume-adjusting insert for a sample vessel, the insert comprising:  
a top end and a bottom end, the top end comprising a septum seal penetrable by a  
deposit/extraction element;  
a through-chamber extending from the septum seal of the top end to the bottom end; and  
5 a seal surface disposed on an outside surface of the insert, the seal surface sealing an  
inside surface of the sample vessel when inserted into the sample well, the seal surface  
defining a vessel chamber disposed in a lower portion of the sample vessel, the vessel  
chamber in communication with the through-chamber of the insert.
2. The volume-adjusting insert of claim 1 wherein the septum seal comprises a material  
of predetermined resiliency to provide sufficient frictional engagement with the  
deposit/extraction device when inserted to allow positioning of the insert with the sample  
deposit/extraction device.
3. The volume-adjusting insert of claim 1 comprising a body sealed at an upper end by a  
removable cap, the body comprising the through-chamber and the cap comprising the  
septum seal.
4. The volume-adjusting insert of claim 1 wherein the seal surface of the insert comprises  
a predetermined outer diameter to seal the inside surface of the sample vessel.
5. The volume-adjusting insert of claim 1 comprising a bottom seal surface at the bottom  
end for sealing against a sample processing element in the sample vessel.

6. The volume-adjusting insert of claim 3 wherein the body comprises a lower portion comprising an expansion chamber.

7. The volume-adjusting insert of claim 3 wherein the body comprises a generally cone-shaped needle guide between the top end and the bottom end.

8. The volume-adjusting insert of claim 3 wherein the removable cap is a crimp cap.

9. The volume-adjusting insert of claim 3 wherein the removable cap is a snap cap.

10. A method of testing samples, the method comprising the steps:

5 inserting a volume-adjusting insert into a sample well, the volume-adjusting insert comprising a septum seal in an upper portion of the insert, a through-chamber between the septum seal and a bottom end of the insert, and a seal surface on an outer surface of the insert, the seal surface and through-chamber defining a reduced-volume sample chamber as compared to the sample well;  
inserting a penetrating sample deposit/extraction element through the septum seal; and  
depositing sample fluid into the reduced-volume sample chamber.

11. The method of testing samples of claim 10 comprising the additional step of positioning the sample well with the sample deposit/extraction element through frictional engagement of the sample deposit/extraction element and the septum seal.

12. The method of testing samples of claim 10 comprising the additional step of utilizing hydraulic pressure generated by the penetrating sample deposit/extraction device to transport sample fluid through the through-chamber and out of a bottom-extraction opening of the sample well.

13. The method of testing samples of claim 12 comprising the additional step of passing the sample fluid through a processing element disposed between the through-chamber and the bottom-extraction opening.

14. A volume-adjusting insert for reducing the sample volume of a bottom-extraction sample vessel, the insert comprising:

a top end and a bottom end, the top end comprising a septum seal penetrable by a deposit/extraction element;

5 a through-chamber extending from the septum seal of the top end to the bottom end; and  
a seal surface disposed on an outside surface of the insert, the seal surface of  
predetermined dimensions to seal an inside surface of the sample vessel when inserted  
into the sample well, the seal surface defining a reduced-volume vessel chamber disposed  
in a lower portion of the sample vessel, the reduced volume vessel chamber in  
10 communication with the through-chamber of the insert and a bottom extraction opening  
of the bottom-extraction sample vessel.

15. The volume-adjusting insert of claim 14 wherein the through-chamber is axially aligned with the septum seal so that the through-chamber acts as an alignment element to align the insert with the deposit/extraction element when inserted into the through-chamber.

16. The volume-adjusting insert of claim 14 wherein the septum seal comprises a material of predetermined resiliency to provide sufficient frictional engagement with the deposit/extraction element when inserted to allow positioning of the insert with the sample deposit/extraction element.

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